

31 October 2002
Application No.: 09/645,827
Docket: 1000.06

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3. (amended) An optical system production line as claimed in claim 1, wherein the optical system aligner characterizes the positions of the optical components by activating optical links of optical systems on the benches, detecting optical signals after interaction with at least some of the optical components, and adjusting the optical components to optimize transmission of optical signals over the links.
4. (amended) An optical system production line as claimed in claim 1, wherein the optical system aligner energizes active components of optical systems on the benches and adjusts the optical components to optimize optical signal transmission through the systems from the active optical components.
5. (amended) An optical system production line as claimed in claim 1, wherein the optical system aligner energizes active components of optical systems and adjusts positions of at least one passive optical component in each of the optical systems to optimize optical signal transmission from the active components to the at least one passive component.
6. (amended) An optical system production line as claimed in claim 1, wherein the optical system aligner energizes active components of optical systems and adjusts positions of at least two passive optical components in each of the optical system to optimize optical signal transmission between the passive components.

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8. (amended) An optical system production line as claimed in claim 1, wherein the optical system aligner comprises two jaws for engaging a mounting structure supporting the optical component and moving the structure relative to the bench.

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Please add new claims 9-16, as follows:

9. (new) An optical system production method, comprising
supplying optical benches from an optical bench supply;
supplying optical components from a component supply;

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receiving optical components from the optical component supply and optical benches from the optical bench supply at a pick-and-place machine;
attaching the optical components to the optical benches with the pick-and-place machine;
characterizing positions of the optical components, which have been attached to the optical bench; and
mechanically adjusting the relative positions of the optical components with an optical system aligner.

10. (new) An optical system production method as claimed in claim 9, wherein the step of attaching the optical components to the optical benches with the pick-and-place machine comprises solder bonding the optical components to the optical benches.

11. (new) An optical system production method as claimed in claim 9, wherein the step of characterizing the positions of the optical components comprises:
the optical system aligner activating optical links of optical systems;
detecting optical signals after interaction with at least some of the optical components; and
adjusting the optical components to optimize transmission of the optical signals in the optical systems.

12. (new) An optical system production method as claimed in claim 9, wherein the step of characterizing the positions of the optical components comprises:
energizing active components of optical systems; and
adjusting the optical components to optimize optical signal transmission through the optical systems from the active optical components.

13. (new) An optical system production method as claimed in claim 9, wherein the step of characterizing the positions of the optical components comprises:
energizing active components of optical systems; and

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adjusting a position of at least one passive optical component in each of the optical systems to optimize optical signal transmission from the active components through the optical systems.

14. (new) An optical system production method as claimed in claim 9, wherein the step of characterizing the positions of the optical components comprises:

energizing active components of optical systems; and

adjusting positions of at least two passive optical components in each of the optical systems to optimize optical signal transmission between the passive components.

15. (new) An optical system production method as claimed in claim 9, wherein the pick and place machine is a flip-chip bonder.

16. (new) An optical system production method as claimed in claim 9, wherein the step of mechanically adjusting the relative positions of the optical components comprises engaging mounting structures supporting the optical components and moving the structures relative to the optical benches with the optical system aligner.

Remarks:

With the entry of the preceding new claims 9-16, claims 1-16 will be pending in this application.

The amendments were made to claims 1, 3-6, and 8 in hopes of improving the readability of the claims through the consistent use of plural forms.

The only outstanding issue was the rejection of claims 1-8 under 35 U.S.C. § 102(b) as being anticipated by an article entitled "Micro-Robotics: Components and Applications", by Wolfgang, *et al.* (Wolfgang article).

As stated previously, a difference between the present claimed invention and the Wolfgang system concerns the inclusion of the subsequent system aligner that